

LISTING OF SPECIFICATION AMENDMENTS

Please amend paragraph 9 of the specification as follows:

Applicant has developed an independent screwed wellhead that overcomes these problems by providing an external thread on a top end of a casing mandrel of the wellhead. The external, or "pin", thread is used for lock down connection of well stimulation components. The external thread permits a double-locking of a well stimulation tool to the wellhead, as is described in detail in co-pending, United States patent application Serial Number 10/440,795 entitled CASING MANDREL WITH WELL STIMULATION TOOL AND TUBING HEAD SPOOL FOR USE WITH THE CASING MANDREL, which was filed on May 19, 2003, and is incorporated herein by reference. The well stimulation tool and casing mandrel provide full-bore access to a casing of the well, while significantly improving safety of a well stimulation crew by ensuring that a hold strength of equipment through which well stimulation fluids are pumped exceeds fluid injection pressures by an adequate margin.

Please amend paragraph 36 of the specification as follows:

The casing mandrel 50 further includes a pin thread 66 on an outer periphery of the casing mandrel top end 52. The pin thread 66 provides a point of attachment for a lockdown nut, permitting a well stimulation tool, or a blowout preventer, high pressure valve, or the like, to be double-locked to the casing mandrel 50, as will be explained below in detail. The ~~aerial~~axial passage 56 includes a secondary seal bore 76 above, and coaxial with, the top end box thread 58. The secondary seal bore 76 provides at least one annular groove 78 for receiving an elastomeric O-ring seal, or the like. The secondary seal bore 76 provides a high pressure fluid-tight seal with an adapter pin, as will also be explained below in detail.

Please amend paragraph 41 of the specification as follows:

The lockdown flange 82 is an annular piece having a flanged top end 94. The top end 94 provides a standard flange or stud pad that permits substantially any well stimulation flow control equipment known in the art to be safely mounted to the screwed independent wellhead 20. An annular shoulder 96 rotatably supports a lockdown nut 98. The lockdown nut 98 is retained between the ~~radial~~annular shoulder 96 and the bottom of

the flanged top end 94, and rotates independently of the lockdown flange 82. The lockdown nut 98 is box-threaded for engagement with the pin thread 66 on the top end of the double-locking casing mandrel 50.

Please amend paragraph 44 of the specification as follows:

The top surface ~~104~~102 is a stud pad having circumferentially spaced threaded bores 106 for receiving studs 108. The retainer flange 100 can be used for a low-profile connection of a BOP, a high pressure valve, or a well stimulation tool directly to the casing mandrel 50. The casing mandrel top end 52' shown in FIG. 4a includes an annular groove 110 for supporting a flange gasket. The annular groove 110 may provide a sealed connection between the casing mandrel 50 and the BOP, high pressure valve, or well stimulation tool.

Please amend paragraph 45 of the specification as follows:

As schematically illustrated in FIG. 4b, the adapter flange 100 shown in FIG. 4a can be used in certain circumstances to mount a BOP protector 112, described in co-Applicant's United States Patent 6,364,024, entitled BLOWOUT PREVENTER PROTECTOR AND METHODS OF USING SAME which issued on April 2, 2002, the specification of which is incorporated herein by reference, directly to the independent screwed wellhead 20. In most cases, a blowout preventer (BOP, not shown) or some other flow control equipment is connected to the retainer flange 100, below the BOP protector 112, especially if there is any natural pressure in the well. Accordingly, the BOP protector 112 may be mounted to a top of a BOP as described in the above-referenced United States Patent No. 6,364,024. A mandrel 114 of the BOP protector 112 is stroked down through an axial passage of the BOP, and an annular sealing body 116 on the bottom end of the mandrel 114 seals off against the secondary seal bore 76 of the double-locking casing mandrel 50. The annular sealing body 116 is bonded directly to a bottom end of the mandrel 114. The annular sealing body 116 provides a high pressure seal against the wall of the secondary seal bore 76 (FIG. 4a). A base member 118 includes a flange for connection to the retainer flange 100, using ~~flange bolts~~studs 108. An annular cavity surrounds a bottom of an axial passage for retaining a chevron packing 117. A pin-threaded top end of the base member 118 permits a lockdown nut 109 of a mandrel head

119 to be secured to the base member 118. A fracturing head 111, only partially shown, provides flow control and a connection point for high pressure lines (not shown). The mandrel head 119 includes a top flange for connection of the fracturing head 111, or other stimulation equipment, an outer wall having an annular shoulder for supporting the lockdown nut 109, and an axial passage including a box-threaded bottom end for threaded coupling with a top end of the mandrel 114.

Please amend paragraph 48 of the specification as follows:

If stimulation fluids laden with sharp sand or other proppants are to be pumped into the well during a well stimulation procedure using the BOP protector, the top end box thread 58 of the casing mandrel 50 can be protected from erosion using a high pressure fluid seal for sealing against the secondary seal bore ~~96-76~~ as described in co-applicant's United States Patent No. 6,247,537, which issued on June 19, 2001. One embodiment of the high pressure fluid seal provides an inner wall that extends downwardly past the top end box thread 58 of the casing mandrel 50 to prevent the top end box thread 58 from being "washed out" by the proppants, as shown in FIG. 4b.

Please amend paragraph 49 of the specification as follows:

FIG. 5a schematically illustrates the retainer flange 100 in exploded view with the adapter pin 80 and the double-locking casing mandrel 50 of the independent screwed wellhead 20 shown in FIG. 2. Each illustrated component has been described above with reference to a previous drawing, and is indicated by the same reference numeral. The adapter shown in FIG. 5a permits coupling of any of a well stimulation tool, a blowout preventer, and a high pressure valve that is configured to receive the top nipple section 88 of the adapter pin 80. It will be appreciated by those skilled in the art that a low profile control stack is advantageous for manipulating equipment, and provides a more sturdy control stack. The retainer flange 100 provides the top surface ~~104-102~~ on a level with the casing mandrel top end 52. An example of the adapter shown in FIG. 5a in use is shown in FIGs. 5b and 5c.

Please amend paragraph 50 of the specification as follows:

FIGs. 5b,c schematically illustrate the retainer flange 100 in exploded and cross-sectional views, to which a prior art high pressure valve 120 is mounted. The high

pressure valve 120 could be replaced by a blowout preventer (BOP), a well stimulation tool, or the like tool. Components shown in FIGS. 5 and 6 that have been described above are the same reference numerals and those descriptions are not repeated. Since the diameter of the axial passage 104 of the retainer flange 100 is equal to the diameter of the top end of casing mandrel 50, and the adapter pin 80 has a much smaller diameter, the order in which the adapter pin 80 and retainer flange 100 are coupled to the casing mandrel 50' and the high pressure valve 102 is optional. Regardless of the assembly sequence, it is preferable to tighten the ~~bolts~~studs 108 after the adapter pin 80 is connected to the high pressure valve 120, and to the top end box thread 58 of the casing mandrel 50, and the retainer flange 100 is secured to the casing mandrel 50, so that a tension exerted by the ~~bolts~~studs 108 locks the box threads 104 of the retainer flange 100 with respect to the pin thread 66 on the outer wall of the casing mandrel 50, while providing a second lock between the high pressure valve 120 and the screwed independent wellhead 20.